

Defence Portfolio

COMMITTEE INQUIRY QUESTION

(Question No.1)

Senator Mehreen Faruqi asked the Department of Defence, upon notice, on 03 September 2021:

Senator FARUQI: You also spoke about public engagement, which obviously might have been a challenge over the last 18 months. Can you give us a picture of how that has panned out? How many people have been engaging with your online events? If you could just give us more details about that, that would be great.

Ms PERKINS: I'm going to throw to Mr Fankhauser in a moment. My observation and my focus in the next six to 12 months will be how we can ramp back up to the level of engagement that we have experienced in the past. COVID has made it very, very difficult. And, as we all know, as much as we can provide an enormous amount of information on a website, that's a much harder way for people to engage with the information than community drop-in centres and so forth. So we've moved some sessions online. We've been very committed to publishing to the website. As I said, I think there'll be a ramp-up as we make progress on the remediation action plans to more detailed community engagement. But I'll throw over to Dan and see if he's got some details on the volume of people we've been able to engage with.

Senator FARUQI: That would be great, because everything has moved online. Even the parliament has moved online. People are engaging online, so I think it's important that we make those events for people to put their input into—not just information sessions but for people to actually engage.

Ms PERKINS: Yes. And it might be that we need to do a bit of technical work on our website in the background to have a look at the volume. Sometimes, as you'll appreciate, government websites haven't been set up to optimise understanding of our traffic of people logging on.

Senator FARUQI: You could provide that on notice, but I'm specifically asking if you've had any online events or engagement events over the last 18 months as a replacement for drop-in centres and engaging with communities? What has been the direct engagement with communities over the last 18 months?

Mr FANKHAUSER: We'll certainly get that information for you in detail, but I can advise that, in recent months while travel restrictions and border movements have been more challenging, what we've been doing is briefing through a range of stakeholders, including local representatives, so that we can convey the messages and the latest advice that we have out to their communities. We had scheduled a number of activities, and I note the committee itself was intending to be at Williamstown today, but, unfortunately, the current circumstances forced us to move the session to a virtual one. The same situation applied to a number of other sites that we had plans to engage with, but have had to turn them off at late notice.

Mr FANKHAUSER: We've prerecorded some videos and included those on our website, including one that I recently did in relation to the findings of our studies at Blamey Barracks, Kapooka, and the Wagga area. And I think we're very much looking forward to the opportunity, when the circumstances allow, to get back and continue our one-on-one engagement with affected communities.

Senator Mehreen Faruqi – The Department of Defence has provided the following answer to the Senator's question:

Since June 2020, Defence has held nine community engagement events to provide affected communities information on the progress of local environmental investigations. Below is a summary of these events:

- **24 June 2020 – Holsworthy Barracks, New South Wales:** An Online Community Update was published to share the findings of the Human Health and Ecological Risk Assessment and the recommendations of the PFAS Management Area Plan.
- **18 August 2020 – HMAS Cairns, Queensland:** An Online Community Update was published to share the findings of the Human Health and Ecological Risk Assessment for HMAS Cairns and for the Detailed Site Investigation and Ecological Risk Assessment for the former World War Two Navy Fuel Installation at Edge Hill. The update also shared the recommendations of the PFAS Management Area Plan.
- **18 August 2020 – Lavarack Barracks, Queensland:** An Online Community Update was published to share the finding of the Ecological Risk Assessment, the second Seasonal Monitoring Event report and the recommendations of the PFAS Management Area Plan.
- **23 September 2020 – RAAF Base Amberley, Queensland:** An Online Community Update was published to share the findings of the Ecological Risk Assessment and the Human Health Risk Assessment for the former Leichhardt Golf Course Area. The update also shared the recommendations of the PFAS Management Area Plan.
- **23 September 2020 – Wide Bay Training Area, Queensland:** An Online Community Update was published to share the findings of the Detailed Site Investigation and the recommendations of the PFAS Management Area Plan.
- **04 November 2020 – RAAF Williams (Laverton), Victoria:** An Online Community Update was published to share the findings of the Detailed Site Investigation and to outline the next steps of the investigation.
- **24 November 2020 – Bandiana Military Area, Victoria:** An Online Community Update was published to share the findings of the Human Health and Ecological Risk Assessment and the recommendations of the PFAS Management Area Plan.
- **03 December 2020 – Jervis Bay Range Facility, Australian Capital Territory:** Two community walk-in sessions were held to share the findings of the Ecological Risk Assessment, the Supplementary Detailed Site Investigation report and the recommendations of the PFAS Management Area Plan. Fourteen community members attended the first community walk-in session. The second session was specifically for the Wreck Bay community and four community members attended.

- **23 June 2021 – Blamey Barracks (Kapooka), New South Wales:** An Online Community Update was published to share the findings of the Human Health and Ecological Risk Assessment and the recommendations of the PFAS Management Area Plan.

Eight of these events were Online Community Updates. Online Community Updates are not intended to replace face-to-face information sessions but are an important alternative communications channel, particularly in light of current restrictions in relation to movement and social distancing.

Online Community Updates are published on the Defence PFAS Investigation and Management Program website. They include a pre-recorded video presentation (slides and voice recording); supporting factsheets and reports; an online field to submit questions and publish answers; and an online field for the community to provide feedback on this delivery method. These updates meet accessibility requirements by including closed captions, a video transcript, and a PDF version of the presentation slides.

Online events are advertised in local publications throughout the four-week period. On the day online events go live, an email notice is provided to Defence's registered stakeholder list. During the first week of publication, a letterbox drop occurs to advise residents living in the vicinity of a base of the update. Defence is reviewing how communities are advised of Online Community Updates to ensure affected communities have sufficient notice and opportunity to engage with these processes.

Defence has observed that digital updates achieve a level of engagement with affected communities that is comparable, or in some cases greater, than attendance through face-to-face information sessions. The table below provides a comparison of in-person attendance and online interactions at sites where Defence has recently provided Online Community Updates.

Site	Most recent face-to-face event				Online Community Update				
	Date	Attendees	Community updates webpage views ¹	Site webpage views ¹	Date	Community updates webpage views ¹	Site webpage views ¹	Video views ²	Direct advertising reach ³
Holsworthy Barracks	08-Nov-18	20	24	198	23-Jun-20	240	441	69	82
HMAS Cairns	02-Dec-19	7	5	63	18-Aug-20	39	133	10	27
Lavarack Barracks	03-Dec-19	27 ⁴	16	262	18-Aug-20	69	610	20	120
RAAF Base Amberley	29-Aug-19	14	12	97	23-Sep-20	52	399	10	450
Wide Bay Training Area	17-Jul-19	13	36	85	23-Sep-20	19	186	16	1622
Bandiana	17-Sep-18	10	46	255	24-Nov-20	188	767	39	10,000
RAAF Williams (Laverton)	12-Oct-18	33	24	83	04-Nov-20	326	487	156	4,000
Blamey Barracks (Kapooka)	18-Sep-19	25	11	35	23-Jun-21	70	328	23	131

¹ This is the number of unique page views on the investigation site webpage for the four weeks following the community event or the online update publication date. This figure includes page views from Defence employees in addition to community members. Unique page views refers to the number of sessions during which the page was viewed at least once.

² This view count is generated by YouTube, the video host, it includes views from Defence employees.

³ This is the greater of either the number of properties that received a letterbox drop advising of the update, or the number of people on the community stakeholder list that received an email notice.

⁴ 10 community members attended the community event and 17 attended the shopfront.

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COMMITTEE INQUIRY QUESTION

(Question No. 2)

Senator Mehreen Faruqi asked the Department of Defence, upon notice, on 03 September 2021:

Senator FARUQI: Have you developed plans yet and time lines for the remediation of those sites, and what is that time line?

Ms PERKINS: Yes, there is. That's the work we're doing now, and I think it is fair to say that our expectations on that time line were optimistic. So, as we've started doing that detailed work to take the management plan and develop unique remediation solutions for each site, it's probably taking longer than we anticipated. I think we would have felt it would have taken around 12 months for each site, and I think we're at the first stages of that. What we will be doing in each of those is the monitoring and the sharing of that information and working through those solutions. And, as I said, because each site will be different, the solutions will be different and their implementation will be different. In response to your point just now to Mr Fankhauser, I think part of that delay in community engagement is as much working through the technical detail of those remediation plans to a level where we are in a position to have fruitful conversations with communities. It's been more difficult with COVID; it's been difficult to do the ground work in some of these locations. I think we've all experienced that over the last few years when mobilising. As soon as we ramp up we've been ramping back down with the various restrictions in many of these locations. But we're managing it day by day. It might sound trite, but we're following the science and we're learning at every stage. We won't wait for perfect plans; we will continue to do remediation activities as we're confident that they're providing the solution that we need.

Senator FARUQI: Could you provide the committee with the time lines for each of those sites and the overall time line for when everything will be completed? That would be appreciated.

Ms PERKINS: We'll provide you with time lines. We'll have goals around completion. From what we've learned on the PFAS journey over the last five or six years, I'm not sure I have a completion date for you but rather ongoing business-as-usual work on bases and with communities which is about remediation and monitoring, probably forever.

Senator Mehreen Faruqi – The Department of Defence has provided the following answer to the Senator's question:

Defence is committed to addressing per- and poly-fluoroalkyl substances (PFAS) contamination in a deliberate and evidence-based manner. Responding to PFAS contamination is a complex issue and requires an effective, evidence-based and nationally consistent response. Each site is different and there is no one-size-fits-all solution that can be applied across every site.

Defence's remedial objective is to prevent or minimise PFAS migration from Defence properties, so far as reasonably practicable. Defence prioritises remedial works that remove PFAS from the environment and that address off-site migration. It is not currently possible or feasible to remove all PFAS contamination from a Defence site or from communities surrounding Defence sites. In all cases, risk assessments drive Defence's responses.

At the conclusion of a PFAS environmental investigation and based on its findings, a PFAS Management Area Plan is produced for each site investigated. The plan recommends actions to manage and reduce elevated risks of PFAS exposure at the Defence site and in the surrounding community. Regardless of recommendations on remediation, each plan provides an Ongoing Monitoring Program to monitor and track PFAS contamination over coming years.

Where remediation is recommended, Remediation Action Plans are developed, which typically assess options to achieve remediation goals; select and justify a preferred approach; and identify how successful implementation will be demonstrated. The development of a Remediation Action Plan requires a range of additional data (over and above that collected during the investigations phase) to inform options and the design of associated works. Following data collection and analysis, timing of any remedial works is also influenced by a range of factors, including procurement of necessary consultants and experts, complexity of addressing contamination at the site, Defence capability requirements, seasonal timing and gaining concurrence of technical advisers (who are separately accredited as auditors by state and territory Environment Protection Authorities) to verify that the remedial works are appropriate to the circumstances of each site.

The PFAS Management Area Plan for each site is an iterative document and is regularly reviewed, in consultation with state and territory Environment Protection Authorities. As priority actions and remedial works are undertaken, it is important to understand the effectiveness of those actions and to determine the importance and environmental benefit of next steps.

Attachment A provides details of progress in implementing PMAPs at each site in Defence's national PFAS investigation and management program.

State	Site	PMAP Released	Ongoing Monitoring Status	Remediation Status
ACT	Jervis Bay	Dec 2020	<ul style="list-style-type: none"> • Next sampling Oct 2021 	<ul style="list-style-type: none"> • A mass flux study is underway. • An in-situ groundwater treatment trial is in progress. • Removed 40 tonnes of PFAS-contaminated treated sewerage water from HMAS Creswell, in support of the Jervis Bay Territory Administration which operates the local sewerage treatment plant. • Developing a Remediation Action Plan for the area between the RAN School of Survivability and Ship Safety and the east-west runway is underway, with remediation actions likely to be an engineered cap over the source area (which is an impermeable physical barrier to seal the contaminated soil), and capturing and diverting of surface water to reduce flow over PFAS-impacted soils before treatment and release.
NSW	RAAF Base Williamtown	Jul 2019	<ul style="list-style-type: none"> • Last sampling May 2021 • Next sampling Nov 2021 	<ul style="list-style-type: none"> • A mass flux study is underway. • Operating three groundwater treatment plants on-base. Treated over 3.3 billion litres of water to date. • Operating a passive barrier water treatment system at Lake Cochrane. • Excavated over 14,300 tonnes of PFAS-contaminated soil on-base to minimise further migration of PFAS. • Conducting a groundwater strategy review to evaluate the effectiveness of remedial measures to date. The findings of the review will help determine if any further source areas require remedial works, if current water treatment activities require modification, or if any additional remedial measures are required to minimise the migration of PFAS from RAAF Base Williamtown. The review is expected to be completed in Q4 2021. • Planning for off-base groundwater extraction bores to the south of RAAF Base Williamtown, to slow PFAS migration and reduce groundwater plume concentrations. Groundwater would be extracted, piped back to RAAF Base Williamtown and treated at the Southern Area water treatment plant.
NSW	RAAF Base Richmond	Aug 2019	<ul style="list-style-type: none"> • Last sampling May 2021 • Next sampling Nov 2021 	<ul style="list-style-type: none"> • A mass flux study is underway. • Completed remediation of soil at the former firefighting training ground in Q3 2021, including stabilisation (in which a binding agent is added to the soil to prevent movement of PFAS) and the excavation and disposal of highly contaminated soils to licensed off-site facilities. More than 4,000 m³ of soil was treated or removed from this area. • Reviewing PMAP and considering next steps.

State	Site	PMAP Released	Ongoing Monitoring Status	Remediation Status
NSW	HMAS Albatross	Jul 2019	<ul style="list-style-type: none"> • Last sampling Aug 2021 • Next sampling Feb 2022 	<ul style="list-style-type: none"> • A mass flux study is underway. • Developing a Remediation Action Plan for the former fire training area, with remediation actions likely to be a combination of stabilisation and an engineered cap (which is an impermeable physical barrier to seal the contaminated soil). Defence expects to commence the physical works in Q1 2022.
NSW	Holsworthy Barracks	Jun 2020	<ul style="list-style-type: none"> • Last sampling Sep 2021 • Next sampling Mar 2022 	<ul style="list-style-type: none"> • Defence has conducted further sampling in the residential area around the Liverpool Fire Station to close out a data gap in the Human Health Risk Assessment, with results to be published in Q4 2021. • Procuring a consultant to implement the PMAP and a remedial activity associated with contaminated soil removal.
NSW	Singleton	Expected Q4 2021	<ul style="list-style-type: none"> • Not yet commenced 	<ul style="list-style-type: none"> • Not yet commenced.
NSW	RAAF Base Wagga	Nov 2018	<ul style="list-style-type: none"> • Last sampling Apr 2021 	<ul style="list-style-type: none"> • A mass flux study is underway. • Preparing for remedial works which are expected to commence in Q2 2022. These works are expected to include the demolition of the fire training pad; and upgrade of existing degraded stormwater and sewer infrastructure; and the replacement and/or treatment of soil surrounding new infrastructure. • Working with Wagga Wagga City Council to manage soil excavated as part of the Council's runway extension project, including reimbursement of costs for management of contaminated soils.
NSW	Blamey Barracks (Kapooka)	Jun021	<ul style="list-style-type: none"> • Next sampling Oct 2021 	<ul style="list-style-type: none"> • Procuring a consultant to implement the PMAP.
VIC	RAAF Base Williams (Laverton)	Expected Q4 2021	<ul style="list-style-type: none"> • Not yet commenced 	<ul style="list-style-type: none"> • Not yet commenced.
VIC	RAAF Base East Sale	Jul 2019	<ul style="list-style-type: none"> • Last sampling Aug 2021 • Next sampling Oct 2021 	<ul style="list-style-type: none"> • A mass flux study is underway. • Conducting a drainage study and additional sampling to delineate to identify which source areas have the greatest potential to contribute PFAS to the surface water and off-site drainage. Results for this work are expected by end Q4 2021.

State	Site	PMAP Released	Ongoing Monitoring Status	Remediation Status
VIC	HMAS Cerberus	Oct 2018	<ul style="list-style-type: none"> • Last sampling Jul 2021 • Next sampling Dec 2021 	<ul style="list-style-type: none"> • A mass flux study is underway. • Removed PFAS-impacted soil and sediment from the Ornamental Pond in July 2020. • Remediating soil from the fire training ground at the RAN School of Survivability and Ship Safety, which will be excavated and placed into a containment cell to reduce PFAS migration from HMAS Cerberus. These works are underway and are expected to be completed in Q3 2022.
VIC	Bandiana Military Area	Nov 2020	<ul style="list-style-type: none"> • Next sampling Oct 2021 	<ul style="list-style-type: none"> • Procuring a consultant to implement the PMAP.
QLD	Army Aviation Centre Oakey	Jul 2019	<ul style="list-style-type: none"> • Last sampling Apr 2021 • Next sampling Oct 2021 	<ul style="list-style-type: none"> • A mass flux study is underway. • Operating two groundwater treatment plants on-base. Treated over 260 million litres of water to date. • Excavated over 20,000 tonnes of contaminated soil in 2018/19 targeting the base drainage system to minimise further migration of PFAS. • Remediation of soil at the former fire training area is underway, with actions including a combination of stabilisation, and the excavation and disposal of highly contaminated soils to licensed off-site facilities. Over 4,600 tonnes of soil have been excavated. • Developing a Remediation Action Plan for remaining soil source areas.
QLD	RAAF Base Amberley	Sep 2020	<ul style="list-style-type: none"> • Last sampling Apr 2021 • Next sampling Oct 2021 	<ul style="list-style-type: none"> • A mass flux study is underway. • Developing a Remediation Action Plan for major source areas including the former fire training areas and the sewage treatment plant. Works are expected to commence in Q2/Q3 2022, with actions likely to include a combination of stabilisation, and the excavation and disposal of highly contaminated soils to licensed off-site facilities.
QLD	RAAF Base Townsville	Dec 2019	<ul style="list-style-type: none"> • Last sampling Apr 2021 • Next sampling Oct 2021 	<ul style="list-style-type: none"> • A mass flux study is underway. • Preparing for remedial works at the former fire training area and former fuel farm, which are likely to include a combination of stabilisation; the excavation and disposal of highly contaminated soils to licensed off-site facilities; and lining of existing unsealed swales to prevent PFAS leaching from soil into drainage. These works are expected to commence in Q2 2022.
QLD	Lavarack Barracks	Aug 2020	<ul style="list-style-type: none"> • Last sampling Aug 2021 • Next sampling Mar 2022 	<ul style="list-style-type: none"> • A mass flux study is underway. • Procuring a consultant to implement the PMAP.

State	Site	PMAP Released	Ongoing Monitoring Status	Remediation Status
QLD	HMAS Cairns	Aug 2020	<ul style="list-style-type: none"> • Last sampling Apr 2021 • Next sampling Oct 2021 	<ul style="list-style-type: none"> • A mass flux study is underway.
QLD	Wide Bay Training Area	Sep 2020	<ul style="list-style-type: none"> • Last sampling May 2021 • Next sampling Oct 2021 	<ul style="list-style-type: none"> • N/A. No remedial works required.
SA	RAAF Base Edinburgh	Jul 2019	<ul style="list-style-type: none"> • Last sampling Aug 2021 • Next sampling Jan 2022 	<ul style="list-style-type: none"> • A mass flux study is underway. • Operating one groundwater treatment plant on-base. Treated over 30 million litres of water to date. • Treated 10,000 tonnes of contaminated soil as part of a soil washing trial, which removed approximately 90% of PFAS from the soil. • Remediating contaminated soil at six key source areas, with likely remedial actions to include a combination of soil washing, stabilisation, and the excavation and disposal of highly contaminated soils to licensed off-site facilities, commencing in Q4 2021.
WA	RAAF Base Pearce	Jul 2019	<ul style="list-style-type: none"> • Last sampling Jun 2021 • Next sampling Sep 2021 	<ul style="list-style-type: none"> • A mass flux study is underway. • Completed soil excavation and installation of a permeable asphalt cap to reduce infiltration of surface water at the grounds maintenance area. • Developing Remediation Actions Plans for the fire station and the former fire training areas, with remedial actions likely to include capping and sealing soil surrounding the fire station to reduce further mobilisation of PFAS; and a combination of stabilisation and the excavation and disposal of highly contaminate soils to licensed off-site facilities. Works are expected to commence in Q1 2022.
WA	HMAS Stirling	Jan 2019	<ul style="list-style-type: none"> • Last sampling Jun 2021 • Next sampling Sep 2021 	<ul style="list-style-type: none"> • N/A. No remedial works required
WA	Harold E Holt A & B	May 2019	<ul style="list-style-type: none"> • Last sampling Jun 2021 • Next sampling Nov 2021 	<ul style="list-style-type: none"> • N/A. No remedial works required.
WA	RAAF Base Learmonth	May 2019	<ul style="list-style-type: none"> • Last sampling Jun 2021 • Next sampling Nov 2021 	<ul style="list-style-type: none"> • N/A. No remedial works required.
WA	RAAF Base GinGin	Dec 2018	<ul style="list-style-type: none"> • Last sampling Jun 2021 • Next sampling Sep 2021 	<ul style="list-style-type: none"> • N/A. No remedial works required.

State	Site	PMAP Released	Ongoing Monitoring Status	Remediation Status
NT	RAAF Base Tindal	July 2019	<ul style="list-style-type: none"> • Last sampling Jul 2021 • Next sampling Oct 2021 	<ul style="list-style-type: none"> • A mass flux study is underway. • Operating two groundwater treatment plants on-base. Treated over 1.5 billion litres of water to date. • Installed an interim water treatment plant at the NT Power and Water Corporation facility to treat PFAS-contaminated bore water to supplement the town water supply. Treated over 1.4 billion litres of water to date. • Provided \$23 million (including GST) to NT Power and Water Corporation for the construction and operation of a new ten ML/day water treatment plant. • Developed a Remediation Action Plan to manage contaminated soil at the former firefighting training ground and the current fire station area, with remedial actions likely to be a combination of stabilisation, and the excavation and disposal of highly contaminated soils to licensed off-site facilities. Works are expected to commence in Q2 2022.
NT	RAAF Base Darwin	July 2019	<ul style="list-style-type: none"> • Last sampling Apr 2021 • Next sampling Oct 2021 	<ul style="list-style-type: none"> • A mass flux study is underway. • Development of a Remediation Action Plan for former firefighting training ground one, with remedial works likely to include stabilisation and the excavation and disposal of highly contaminated soils to licensed off-site facilities. Remediation works are expected to commence in Q2 2022 (dry season).
NT	Robertson Barracks	Nov 2018	<ul style="list-style-type: none"> • Last sampling Apr 2021 • Next sampling Oct 2021 	<ul style="list-style-type: none"> • N/A. No remedial works required

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COMMITTEE INQUIRY QUESTION

(Question No.3)

Senator Malarndirri McCarthy asked the Department of Defence, upon notice, on 03 September 2021:

Senator McCARTHY: You said that you're looking at the mass study for PFAS migration around the area. Certainly that area around the Darwin Airport has the Rapid Creek system, plus the links into a lot of the swamplands. I mentioned Robertson Barracks earlier on. Would you like to expand a bit more on what that mass study involves?

Ms PERKINS: I'm a bit concerned not to exceed my technical knowledge in week 4 of my job. I'll check with my colleagues to see if somebody wants to speak to that. It might be something we'd do better to give you detail on through a question on notice. I don't want to evade the question, but there'll be technical expertise in my team working on that that will far exceed my knowledge.

Senator McCARTHY: Would you like to take that question on notice?

Ms PERKINS: Absolutely, yes, and we'd be very happy to provide the details.

Senator Malarndirri McCarthy – The Department of Defence has provided the following answer to the Senator's question:

Per- and poly-fluoroalkyl substances (PFAS) mass flux assessments measure the amount of PFAS that leaves an area, in this case a Defence property in both surface water (runoff after rainfall) and groundwater. PFAS flux is generally measured in grams per day or grams per year across a specific area, such as a drain or the boundary of a site. Mass flux methodologies are well established and guidance is available from a number of respected sources.

In a Defence context, the main surface water pathways from a Defence base will be monitored during a number of rain events to produce sufficient data to estimate the PFAS mass leaving the base. This may include the collection of water samples for analysis and the measurement of stream depth changes and flow rates using automated measuring equipment. Having an understanding of the amount of surface water leaving a base (the flow rate) along with PFAS concentration data enables a determination of PFAS mass being discharged from the base at that location. This provides the surface water PFAS mass flux.

For groundwater, PFAS mass flux is calculated across a defined boundary by understanding the amount of water flowing through an aquifer at a selected location and the concentrations of PFAS in groundwater. The selected location is usually at the base boundary and down gradient (in the direction of groundwater flow) from PFAS source areas. The required information is collected by field scientists and established hydrogeological principles are used to calculate the PFAS discharging through that area (i.e. the groundwater mass flux).

Defence primarily undertakes mass flux measurements for the following reasons:

- a) To inform and prioritise remedial actions. In most instances PFAS flux from Defence properties is dominated by surface water transport (runoff and stormwater), with groundwater transport often a secondary mechanism. In instances where PFAS is mostly transported in surface water, remedial efforts will prioritise surface soils in source areas to reduce PFAS transport via runoff. There are exceptions where the geology (e.g. sand dunes) permit larger fluxes of PFAS in groundwater. In areas where groundwater transport is significant, remediation of groundwater may also be required.
- b) To measure improvements in the long term. As Defence seeks to minimise or reduce PFAS movement from Defence properties, it is important to measure PFAS flux to establish a baseline before remedial works. Further measurements (usually annually) are used to demonstrate improvements following implementation of remedial works. In some instances, improvements may materialise within months, while in other cases it may take longer, depending on the site conditions.

Defence's lead environmental consultants at each base are engaged to design and implement an initial baseline PFAS mass flux assessment. Assessments are intended to be repeatable overtime. Any measurement of a dynamic natural system is challenging. The most important factor is that the methods used for a PFAS flux assessment are repeatable at each base, enabling changes to PFAS mass flux to be measurable over time and enabling longer term trends to be identified.

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COMMITTEE INQUIRY QUESTION

(Question No.4)

Senator Malarndirri McCarthy asked the Department of Defence, upon notice, on 03 September 2021:

Senator McCARTHY: Also, could you expand further on developing the remediation action plan, given that you're now moving into action mode.

Ms PERKINS: Would you be interested in having a go at answering that, Alison, or should we take that on notice?

Ms CLIFTON: For a specific site or generally?

Ms PERKINS: We can talk to the general approach to the remediation action plans as they speak to each of those 26 ones currently underway. But they're so [inaudible] I'd probably be more comfortable taking that question on notice and getting you a proper answer.

Senator Malarndirri McCarthy – The Department of Defence has provided the following answer to the Senator's question:

Defence undertook per- and poly-fluoroalkyl substances (PFAS) environmental investigations at RAAF Base Darwin, RAAF Base Tindal, and Robertson Barracks. At the conclusion of these investigations, PFAS Management Area Plans were developed for each site and are being implemented. This includes Ongoing Monitoring Programs.

The PFAS Management Area Plans for both RAAF Base Darwin and RAAF Base Tindal recommend soil remediation works be undertaken. Defence has worked with its consultants to develop Soil Source Area Remediation Action Plans, which are designed to reduce the migration of PFAS at both sites. Proposed remediation works include:

- Excavation and removal off-site of highly PFAS-contaminated soils.
- Excavation and stabilisation of low to medium-level PFAS-contaminated soils.
- Capping and re-profiling at both source areas to ensure water is managed, to limit infiltration and interaction with remaining soils which have low levels of PFAS contamination.
- Excavation, crushing and encapsulation of infrastructure (including the fire training pad, pipes and one evaporation pond) at the Fire Training Area (RAAF Base Tindal only).

The Remediation Action Plans are in the final stages of clearance including review by an independent Technical Adviser. Once cleared Defence will engage a contractor under a single contract to commence remediation works concurrently in the 2022 dry season.

The PFAS Management Area Plan for Robertson Barracks does not recommended remedial works, and therefore there is no Remediation Action Plan under development or in place. Ongoing monitoring is underway.

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COMMITTEE INQUIRY QUESTION

(Question No.5)

Meryl Swanson MP asked the Department of Defence, upon notice, on 03 September 2021:

Ms SWANSON: I have one other very quick question. I want to know about non-litigated claims. How are they going? I know that this is not specifically your area; it's through the Auditor-General. There are a number of non-litigated claims still outstanding. I'm very anxious to have a progress report—and you can provide this on notice. I don't want just numbers on a page about how many are still outstanding. I want where the outstanding ones are up to and why we haven't gotten further with those. This area is really dragging on too long now.

CHAIR: I'll add to that. Could we please get an update on where all the class action claims are at?

Ms PERKINS: Absolutely. Would you like us to take that on notice? I can give you a quick overview of the cases that are in train. I can't speak to many of them because most of them are before the courts.

CHAIR: We have a minute or two left, so a really quick overview and you can take the rest of the detail on notice.

Ms PERKINS: At a headline level, there is a PFAS class action that was filed on 15 April 2020 by Shine Lawyers on behalf of properties in areas around defence bases at Pearce in WA, Darwin in the Northern Territory, Richmond in New South Wales, Wagga Wagga in New South Wales, Edinburgh in South Australia, Bandiana in Victoria and Townsville in Queensland. There is the 2 February 2021 PFAS class action filed by Shine Lawyers on behalf of the Wreck Bay communities in New South Wales in Jervis Bay and Wreck Bay. Three other litigated claims relating to PFAS at defence bases have been convinced: the Toowoomba Regional Council in the Supreme Court of Queensland in 2018, Oakey Beef Exports on 29 July in the Supreme Court of Queensland and Jack Lee Pty Ltd and The Verandah Manager in October in the Supreme Court of Northern Territory. Those three matters are before the courts and I can't provide any more detail on them. On non-litigated claims, as at 2 September we have resolved 57 non-litigated claims and we have declined 25 non-litigated claims in accordance with the Attorney-General's legal services directions. I'm not in a position to discuss publicly individual non-litigated claims, but 57 were resolved and 25 were declined. As at 2 September 2021, Defence legal had received a total of 336 non-litigated claims and, as I said, we've resolved 57 of those. Two claims were resolved under existing departmental drinking-water policy initiatives—they were assessed as not legal claims—and 55 claims were settled as legal claims. That's the overview, and we will be really happy to take our question on notice and work with our colleagues in our legal division to give you a more detailed answer on those.

Meryl Swanson MP – The Department of Defence has provided the following answer to the Member's question:

All PFAS-related legal claims continue to be assessed on a case-by-case basis and in accordance with the Attorney-General's *Legal Services Directions 2017* (Cth) (Directions). These claims are considered significant legal issues pursuant to the Directions.

PFAS-related class actions

On 20 August 2021, the Court made orders regarding the next steps in *Haswell & Anor v Commonwealth of Australia* and *Wreck Bay Aboriginal Community Council & Anor v Commonwealth of Australia*. This included setting down a joint initial trial for eight weeks, commencing on 01 May 2023.

PFAS-related non-litigated claims

As at 08 September 2021:

- Defence Legal has 219 open non-litigated PFAS-related legal claims.
- Defence Legal has received a total of 303 non-litigated PFAS-related legal claims.
- Defence Legal has resolved 58 non-litigated PFAS-related legal claims:
 - Two claims have been resolved under existing Departmental drinking water policy initiatives. These claims were not assessed as legal claims.
 - 56 claims have been settled as legal claims.
- 26 non-litigated PFAS-related legal claims have been declined in accordance with the Attorney-General's *Legal Services Directions 2017* (Cth).

It would not be appropriate to provide further information in relation to individual non-litigated PFAS-related legal claims.